



7

HEALTH AND SAFETY ELEMENT

Similar to many California cities, San Bruno faces a variety of health and safety hazards from both natural and man-made sources. This chapter provides the policy framework for addressing geologic hazards, potential seismic hazards, flooding, hazardous materials, noise,

and airport safety. The discussion of fire hazards can be found with information on the fire department, public safety, and emergency response services in the Public Facilities and Services Element of the General Plan.



Residential neighborhoods in the city's western hills (top) feature steep topography, some of which is susceptible to landsliding (bottom).

7-1 VISION

The Health and Safety Element addresses preservation of life and property through the following key principles: prevention of potential geologic or seismic hazards through appropriate geotechnical analysis, and mitigation during project planning and development; reduction of flooding hazards through stormwater system improvements and appropriate project design in high-risk areas; and prevention of potential human contact with hazardous materials through safety in the use, transport, and disposal of hazardous materials. The element also seeks to reduce potential noise and safety impacts along transportation corridors, including highways, railroads, and San Francisco International Airport (SFO).

7-2 GEOLOGY AND SOILS

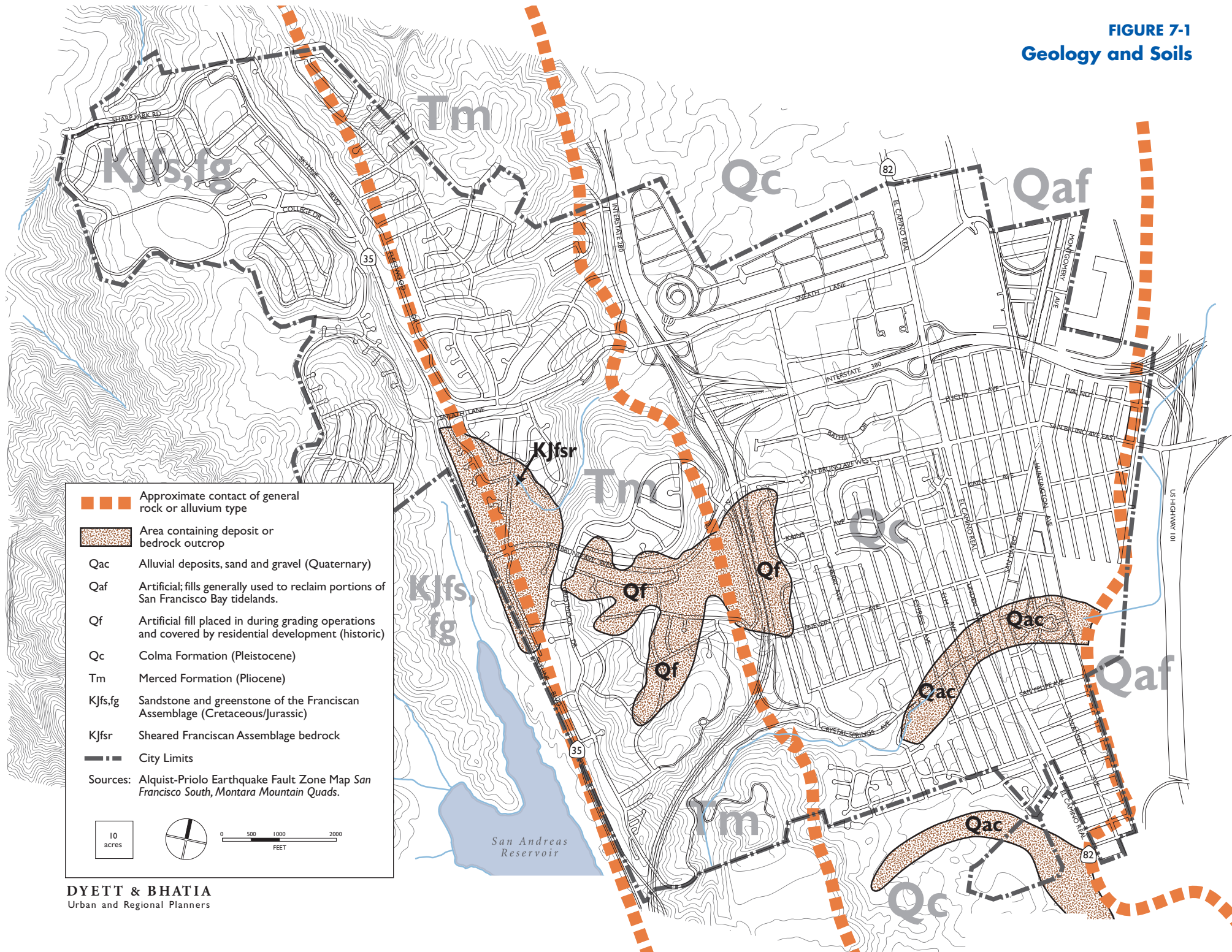
San Bruno is situated between the upland foothills of the Santa Cruz Mountains and the low-lying flatlands of the San Francisco Bay margin. Elevations range from 700 feet above mean sea level west of Skyline Boulevard to near sea level along Highway 101.

San Bruno lies within the physiographic region of California referred to as the Coast Ranges geomorphic province. Much of the Coast Range province is composed of marine sedimentary and volcanic rocks that form the Franciscan Assemblage. The Merced Formation is composed of sandstone, claystone, and siltstone. The younger Colma Formation is weakly consolidated, and consists of gravel, sand, silt, and clay. The eastern portion of the city is underlain by artificial fill material used to reclaim the Bay marginal tideland. Figure 7-1 illustrates the geologic and soils foundation of San Bruno.

Geologic Hazards

Geologic hazards that can affect San Bruno include expansive soils, ground failure (landslides), settlement, and erosion. Expansive soils possess a “shrink-swell” characteristic, which is expansion and contraction of fine-grained clay sediments from the process of wetting and drying. The Colma Formation, underlying eastern San Bruno, is described as moderately expansive. Settlement is the depression of soils when a load, such as a new building or fill material, has been placed on it. Settlement can be accelerated by earthquakes during groundshaking. Erosion generally occurs on steeper slopes, particularly where unnatural slope cuts and grading have occurred. Both settlement and soil erosion have occurred and caused damage in the hillside neighborhoods in western San Bruno.

FIGURE 7-1
Geology and Soils



Ground stability is dependent on the slope and geology as well as the amount of rainfall, excavation, or seismic activities. A landslide is a mass of rock, soil, and debris displaced down-slope by sliding, flowing, or falling. Steep slopes and downslope creep of surface materials characterize areas most susceptible to landsliding. The highest susceptibility to landsliding in San Bruno exists in the upland areas east of Skyline Boulevard and west of I-280, including Junipero Serra County Park. The potential for landslides in this area is considered low to moderate with areas of higher potential, especially in the hillside neighborhoods in western San Bruno. Susceptibility to landsliding could be greater in the Junipero Serra Park area due to the presence of undeveloped, natural slopes. Figure 7-2 illustrates areas of historic landslide activity and landslide potential. Landsliding activity occurs most frequently during El Niño seasons, when heavy rains saturate soils and cause sliding on steep slopes. During El Niño seasons, such as the 1997-1998 winter season, the Public Works Department monitors areas of concern.

Seismic Hazards

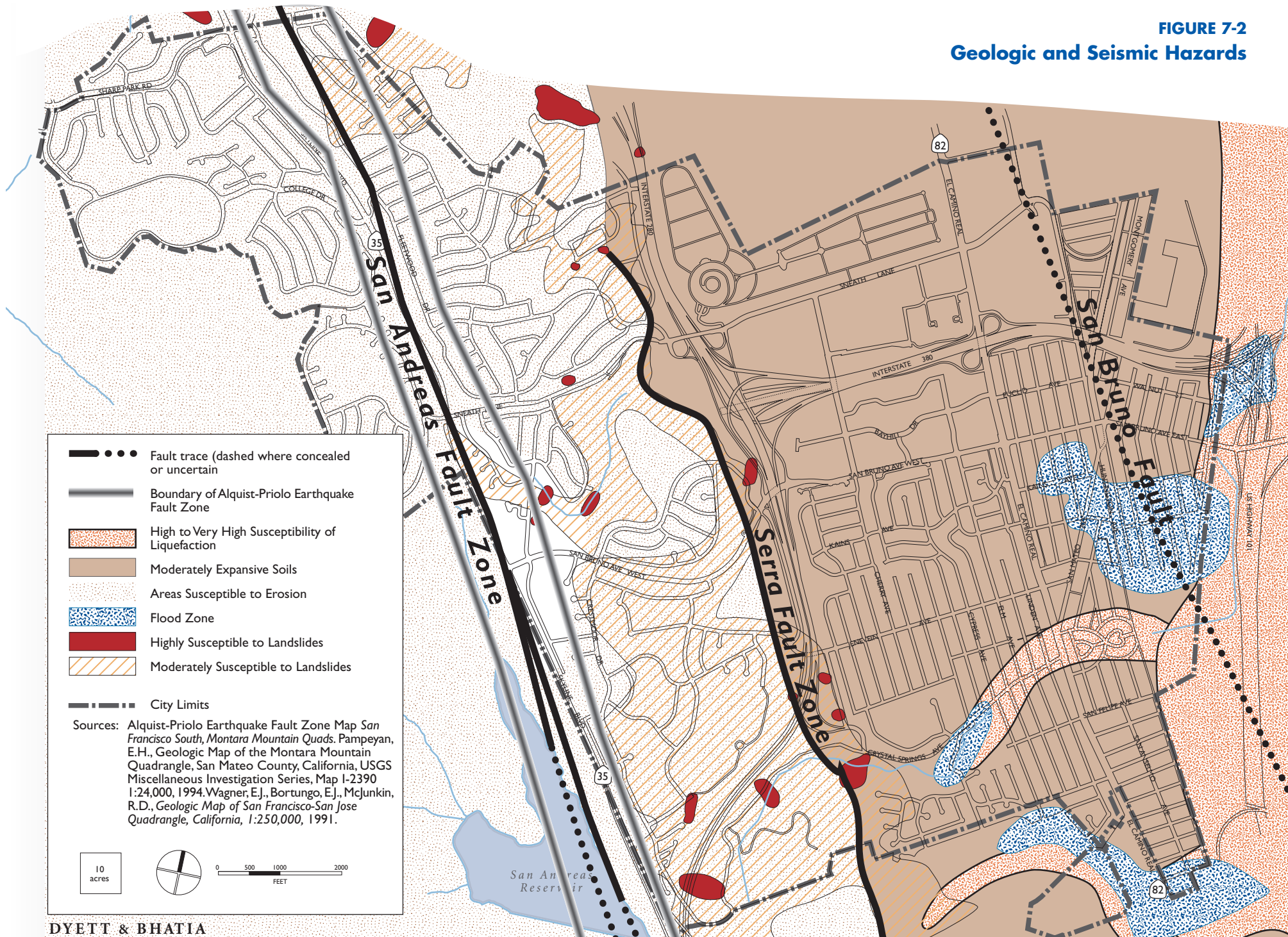
The San Francisco Bay Area contains both active and potentially active faults. Earthquakes pose especially high risks to San Bruno because of the city's close proximity to active faults with relatively frequent past movements. San Bruno straddles the San Andreas Fault and is approximately 18 miles southwest of the Hayward Fault. The San Andreas and Hayward faults are the two principally active, strike-slip faults in the Bay Area¹. The San Andreas Fault is a major structural feature in the region and forms a boundary between the North American and Pacific tectonic plates.

Other principal faults capable of producing significant ground shaking in San Bruno include the San Gregorio-Hosgri, Rodger's Creek-Healdsburg, Calaveras, Concord-Green Valley, and Pilarcitos faults. The Serra Fault is a zone of reverse faulting that trends to the northwest, approximately 3,500 feet east of the San Andreas Fault in San Bruno. The Serra Fault represents the contact between the Merced and Colma Formations and marks the topographic boundary between the upland area west of I-280, and the flatland area to the east. Fault traces within the city are illustrated in Figure 7-2.

The four major hazards associated with earthquakes include fault surface rupture, groundshaking, ground failure (landslides), and settlement. These hazards are defined in the "Geology and Soils" section above. Groundshaking, which may affect areas hundreds of miles distant from an earthquake's epicenter, is magnified by loose unconsolidated soils. Liquefaction, the process by which water-saturated soils transform to liquid, is caused by groundshaking. Liquefaction potential is highest in the eastern areas of the city underlain by Bay margin artificial fills.

¹ Strike-slip faults exhibit displacement in a horizontal direction, but may also have a vertical component.

FIGURE 7-2
Geologic and Seismic Hazards



7-3 FLOODING

The San Mateo County Flood Control District is a Countywide Special District that was created by State legislation in order to provide a mechanism to finance flood control projects. The legislation requires that a flood control zone be formed over an entire watershed and a proposed funding source be determined before a flood control project is undertaken. Recent changes in the State Constitution require an election if a flood control zone is to be financed with property assessments or taxes. There are currently three active flood control zones in this District: Colma Creek, San Bruno Creek, and San Francisquito Creek. Both Colma and San Bruno Creek zones contain parts of the City of San Bruno.

The risk of flooding in urban areas is dependent on the following variables: preceding soil conditions, amount and intensity of rainfall, and capabilities of the storm drain system. It is the function of the storm drain system to move surface runoff into gutters, storm drain inlets, channels, creeks, collection basins, and eventually to the receiving body (San Francisco Bay).

Although San Bruno contains no areas designated by Federal Emergency Management Agency (FEMA) as 100-year floodplains, the City has identified several areas which occasionally flood due to combined high tides and heavy rain:

- Downtown's San Mateo and Mastick Avenues, north of Sylvan Avenue.
- Kains Avenue, east of Green Avenue.
- First through Seventh Avenues, south of Pine Street.
- City Park, along with portions of Crystal Springs Road.
- Magnolia Avenue, adjacent to Capuchino High School.

- Santa Helena and San Juan Avenues, as well as Millbrae neighborhoods to the south.

Flooding occurs in these areas because of inadequate storm drains and low elevation, which subjects the areas to tidal influences. The City's storm drain system does not operate effectively at times of high tide combined with heavy rain.

Storm Drain System

San Bruno's system of storm drains collects and channels surface water (mostly from rainfall) into a series of pipes, trenches, culverts, detention basins, and open channels, managed by the Flood Control District, which transport and empty it into San Francisco Bay. The system is based upon the natural drainage pattern determined by topography. Because of the high relief (steep slopes) in the western third of San Bruno and the more gradual eastward slope east of I-280, a gravity-flow system is used. Its main artery carries water along a course that was formerly San Bruno Creek.

Figure 7-3 illustrates the six watersheds that drain the city. The northern portion of San Bruno drains toward South San Francisco and into Colma Creek watershed. Despite ultimate drainage into the South San Francisco system, the City of San Bruno maintains all storm drainage facilities within the city limits. The city's primary drainage basins—Crystal Springs Creek, Huntington Creek, and San Bruno Creek—encompass 80 percent of San Bruno's land area. These highly modified, intermittent channels are part of the storm drain system maintained by the San Bruno Public Works Department. Several smaller watersheds that are delineated in the eastern portion of the city reflect the pattern of existing storm drain trunks.

San Bruno Creek watershed (A) encompasses an area of two square miles of mostly urbanized land, sloping steeply toward the east. Headwaters of San Bruno Creek are located in the coastal range at the boundary with the City of Pacifica. San Bruno Creek is not a natural creek, but is composed of a series of channels, pipes, and detention basins.

Huntington Creek watershed (C) encompasses approximately one square mile. Huntington Creek begins east of Skyline Boulevard and flows through storm drain pipes and culverts to its juncture with San Bruno Creek.

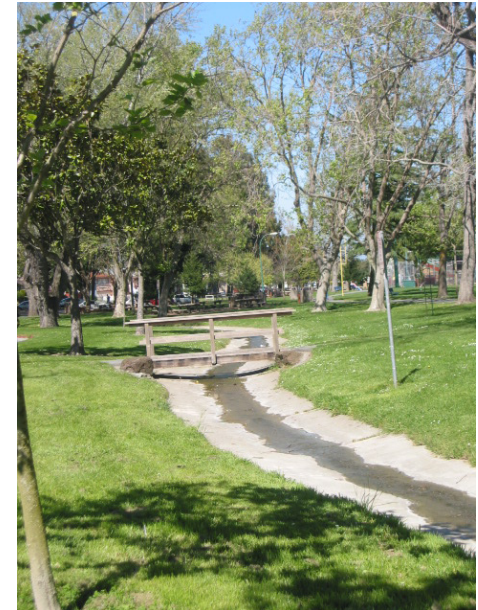
Crystal Springs watershed (B) drains approximately one square mile of the southern part of the city. Crystal Springs Creek originates in Junipero Serra County Park, and maintains a natural stream channel through Junipero Serra County Park and San Bruno City Park.

The discharge point for these watersheds is the San Bruno Channel, maintained by the Flood Control District, located next to the South San Francisco-San Bruno Water Quality Control Plant just north of SFO. Two pump stations are critical to the movement of stormwater in this District; one at Angus Avenue and one at Walnut Street.

Silt and debris in the storm drain system can sometimes cause water to back up and flood surrounding areas. Leaves, branches, household trash, and other debris must be removed regularly in order for the storm drain system to function effectively. The City of San Bruno Public Works Department, Street Division, maintains and repairs the municipal stormwater drainage system. Much of the City's storm drain infrastructure is aging and needs to be replaced. Although adequate under average conditions, there are problem spots where flooding occurs during heavy storms and high tides. Development in San Bruno's low-lying areas could be subject to

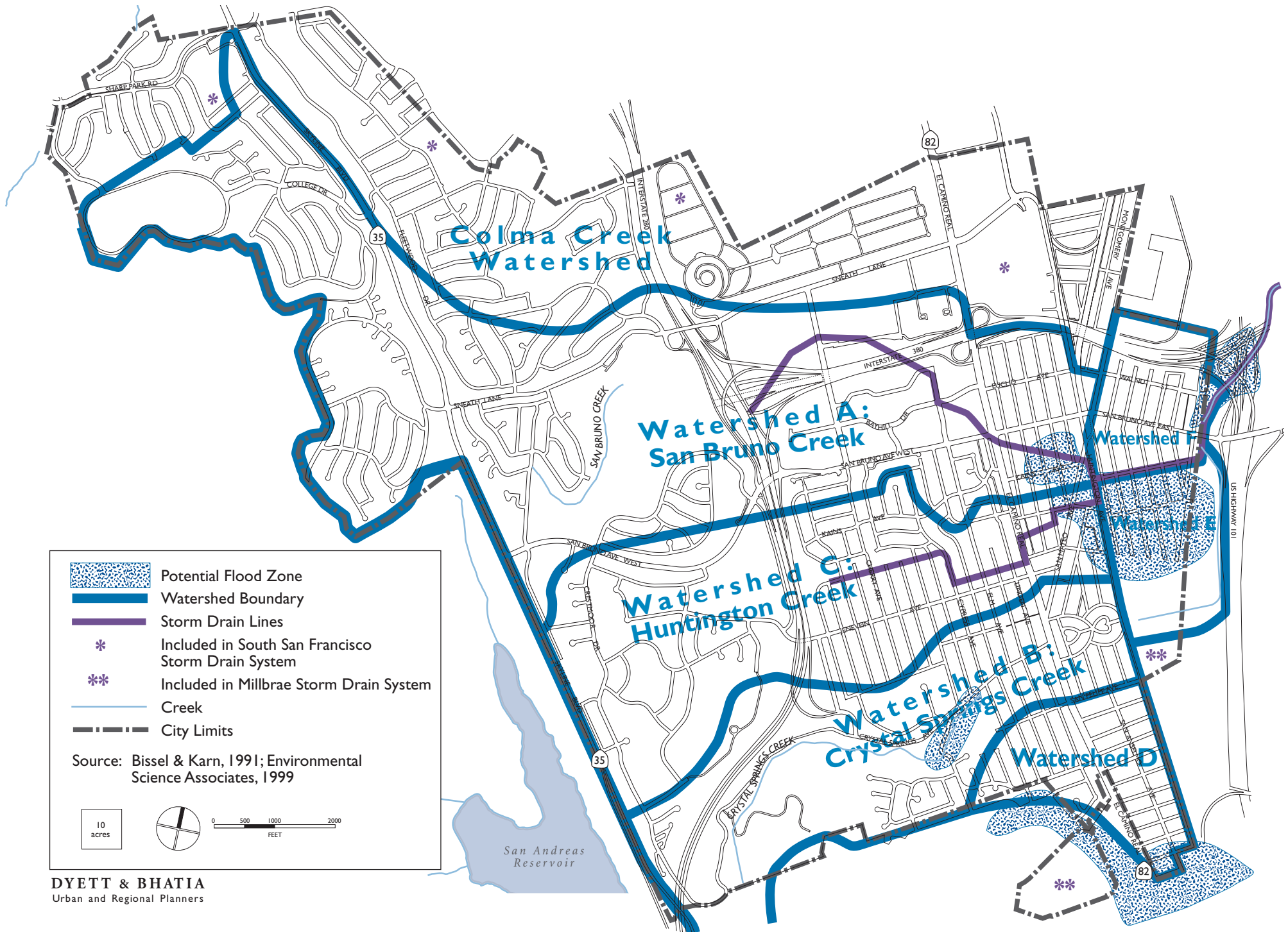
flooding unless adequate measures are taken to improve the drainage system.

A Storm Drainage Master Plan was developed for the City in 1991 by Bissell & Karn, Inc. and an update analysis of that plan was prepared by Brian Kangas Foulk in 1999/2000. Improvements have been made to the three existing trunk lines, and points of constricted flow have been identified. Implementation of recommendations made in the more recent study would increase the diameter of mains in problem locations where they are constricted, add parallel box culverts in key locations to increase flow capacity, and add a storm drain bypass to redirect discharge overflows from the San Mateo Avenue area southward into San Felipe Creek. Although proposed improvements would significantly reduce the city's flooding problem, inundation of some problem areas could still be expected during a 25-year storm event.



Crystal Springs Creek flows in a meandering stream channel through City Park.

FIGURE 7-3 Flooding and Storm Drainage



7-4 HAZARDOUS MATERIALS

Releases, leaks, or disposal of chemical compounds, such as petroleum hydrocarbons,² on or below the ground surface can lead to contamination of underlying soil and groundwater. Disturbance of a previously contaminated area through grading or excavation operations could expose the public to health hazards from physical contact with contaminated materials or hazardous vapors. Improper handling or storage of contaminated soil and groundwater can further expose the public to these hazards, or potentially spread contamination through surface water runoff or air-borne dust. In addition, contaminated groundwater can spread downgradient, potentially contaminating subsurface areas of surrounding properties.

The use of hazardous materials in San Bruno occurs most often in its commercial and industrial areas. Figure 7-4 indicates known areas of potential soil or groundwater contamination in San Bruno caused by leaking underground storage tanks or other potential sources of hazardous materials.³ Uses that generate hazardous waste can include auto body shops due to the use of solvents and petroleum products, machine shops that utilize cutting oils and heavy metals, and auto dismantlers due to the solvents and petroleum fluids within automobiles. In cooperation with the San Francisco Bay Regional Water Quality Control Board (RWQCB) and the California Department of Toxic Substance Control, the San Mateo County Health Services Agency's Environmental Health Division coordinates investigation and remediation of sites that have been affected by leaking underground

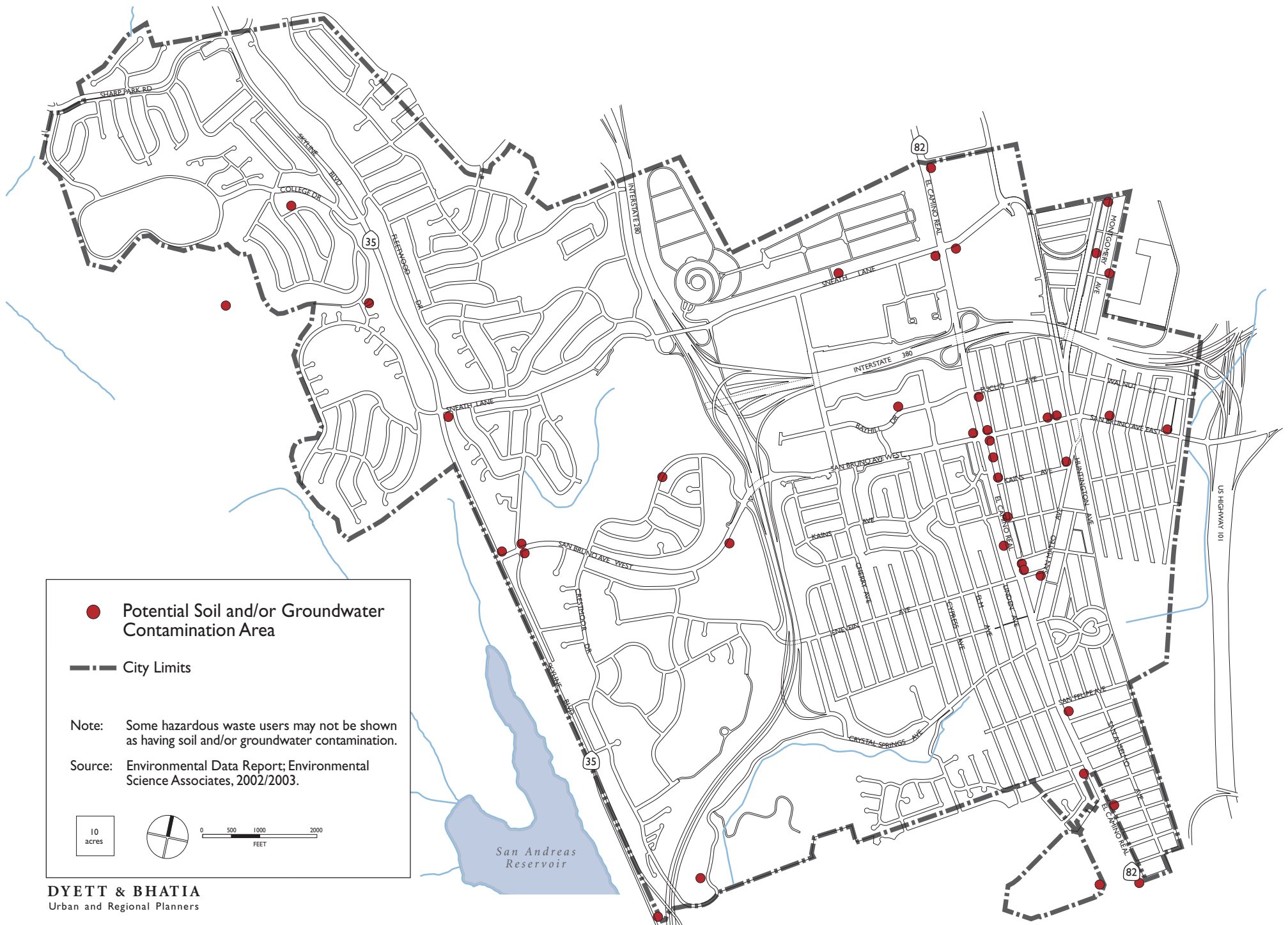
storage tanks or hazardous waste. As shown on Figure 7-4, sites with potentially contaminated soil are largely clustered around industrial areas near El Camino Real. Depending upon the potential extent of contamination in these areas, reuse may be complicated by petroleum hydrocarbon or hazardous materials impacts to soil or groundwater.

San Bruno has a long history of industrial, commercial, and residential development. Based on the age and nature of existing buildings in San Bruno, lead-based paint or asbestos may be present. In general, structures constructed before December 31, 1978 are at risk for lead-based paint. In addition, asbestos-containing materials (ACMs) can be present in thermal systems insulation, as well as wall and floor materials. Asbestos is a naturally occurring fibrous material used as a fireproofing and insulating agent in building construction before such uses were banned by the Environmental Protection Agency (EPA) in the 1970s. Asbestos and lead-based paint can seep into the soil and/or be released into the air, providing a potential threat to the health of workers, as well as persons in the vicinity. Asbestos clean-up is regulated by federal and State laws that include the Clean Air Act and California Occupational Safety and Health Administration (Cal-OSHA). Both the federal OSHA and Cal-OSHA regulate worker exposure during construction activities that affect lead-based paint, including demolition, removal, surface preparation for repainting, renovation, cleanup, and routine maintenance. All sites with existing structures built prior to the 1980s could be at risk for asbestos and lead-based paint contamination, and therefore require individual surveys.

² Petroleum products range from gasoline (the lightest) to motor oil (the heaviest). A common term for the carbon-based compounds that petroleum products are composed of is petroleum hydrocarbons.

³ The locations of potential soil contamination shown on Figure 7-4 are approximate, as facility addresses do not always precisely correspond to the geographic location of tanks or other hazardous materials.

FIGURE 7-4
Potential Contamination Sites



7-5 NOISE

Noise is measured in decibels (dB), which are units of sound energy intensity. Sound waves, traveling outward from a source, exert a sound pressure level measured in dB. The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. To account for this variation, the A-weighted scale is used. A-weighting is a method of frequency weighting to account for the variation in sensitivity of the human ear to the range of frequencies of the audible spectrum. A 3-dBA increase is the smallest change in noise level perceptible to the average person. Average noise exposure in the community is measured by a Community Noise Equivalent Level (CNEL). This is the computed average of noise over a 24-hour period, weighted for time of day.

Factors that can influence human response to noise include intensity, frequency, and time pattern of noise sources; the amount of background noise present prior to the intruding noise; and the nature of work or human activity that is exposed to the noise. The noise level experienced depends on the distance between the source and the receptor; presence or absence of noise barriers and other shielding features; and the amount of noise attenuation (lessening) provided by the intervening terrain.

Noise Sources

Aircraft Noise

Aircraft overflight noise is an important issue in San Bruno due to the city's proximity to SFO. SFO is located to the east of San Bruno, across U.S. 101. The airport has four runways, of which two are east-west (10R-28L and 10L-28R) and two are north-south (1L-19R and 1R-19L). Northeastern portions of San Bruno are situ-

ated beneath flight tracks for arrivals and departures on runways 10R-28L and 10L-28R.

Aircraft noise contour maps are the principal tool used in analyzing airport/land use compatibility in the vicinity of airports. Each contour reflects linear bands subject to similar average noise levels. Two types of noise contour maps have been generated for SFO, one of which is based on computer modeling, while the other is based on actual measured noise levels. The Federal Aviation Administration (FAA), the agency charged with ensuring air safety, generates noise contour maps based on its Integrated Noise Model (INM). SFO received FAA approval for its original Federal Aviation Regulation (FAR) Part 150 Noise Exposure Maps (NEM) and Noise Compatibility Program in 1983. Because of the federally mandated replacement of Stage 2 aircraft with Stage 3 aircraft by 2000, noise contours at SFO have continued to shrink in recent years.

As required by State law, airports that have been designated as noise problem airports (such as SFO) must install and maintain a noise monitoring system that identifies and defines the airport's noise impact boundary (generally the 65 CNEL noise contour), based upon the aircraft noise levels recorded by noise monitoring equipment. Four of the 27 off-airport noise meters are located within San Bruno. In accordance with Title 21 requirements, SFO staff compiles noise-monitoring data and generates 65 CNEL noise contour maps on a quarterly basis.

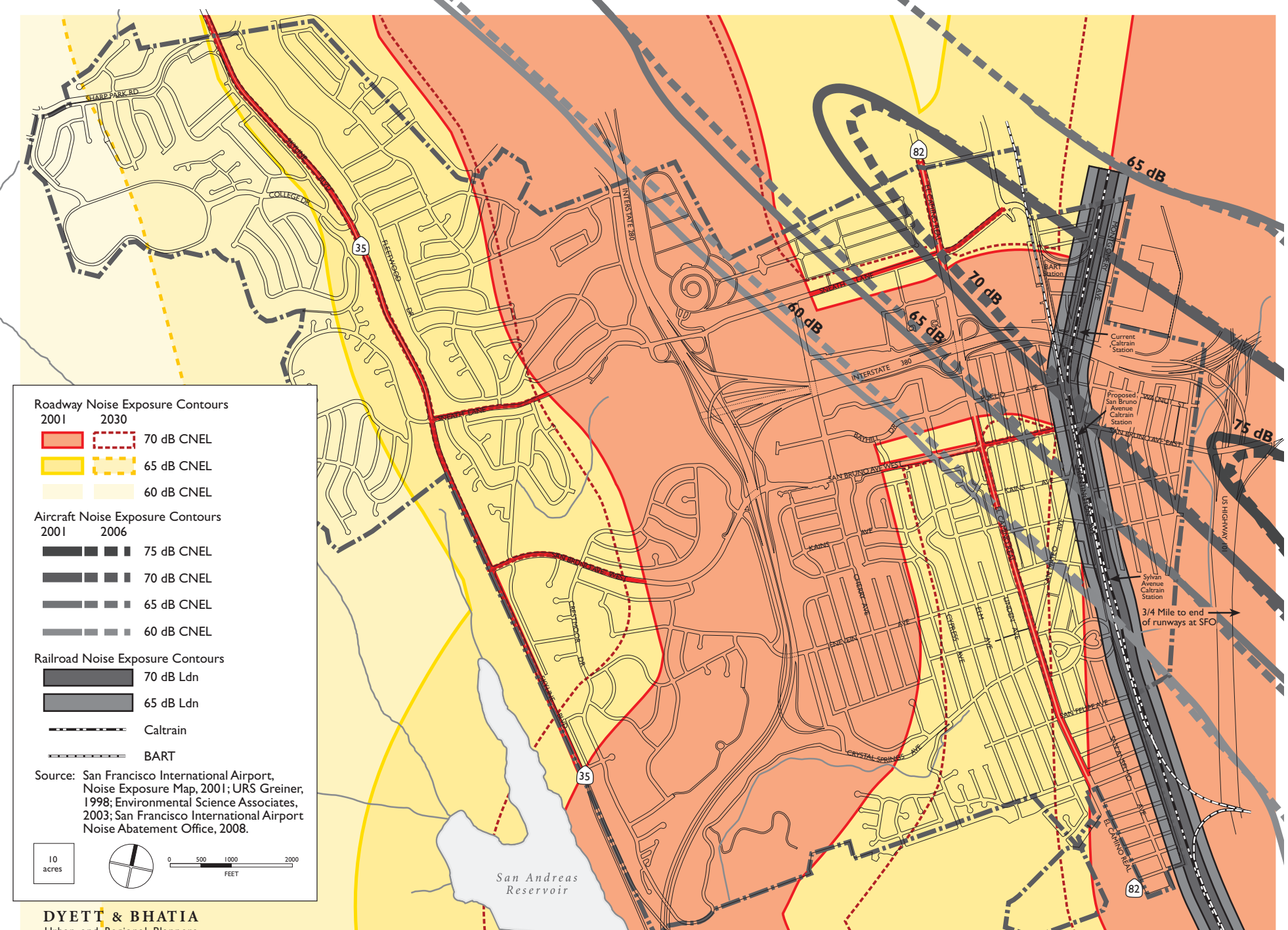
SAN BRUNO AIRCRAFT NOISE INSULATION PROGRAM

Since 1983, the FAA and the City and County of San Francisco Airports Commission, the owner and operator of SFO, have jointly funded local aircraft noise insulation projects in communities near the airport. The goal of these programs is to achieve an interior noise level of 45 dB during an aircraft noise event, consistent with



New development under the General Plan must seek to reduce indoor ambient noise levels from the following sources—the Caltrain railroad tracks (top, center), highways, and arterial roadways (El Camino Real, bottom).

FIGURE 7-5
Existing and Projected Noise Contours



Title 24 noise standards. The Aircraft Noise Insulation Program includes all noise-impacted dwelling units within the 65 CNEL noise contour, as shown on the FAR Part 150 Noise Exposure Maps (NEMs). To date, about 3,000 homes in San Bruno have benefited from this program.

Roadway Noise

Areas of San Bruno are exposed to noise generated by traffic on I-280, I-380, and U.S. 101. El Camino Real is another heavily traveled roadway in the city. Traffic noise depends primarily on traffic speed (high-frequency tire noise increases with speed) and the proportion of truck traffic, which generates engine, exhaust and wind noise. The proximity of freeways and major streets, and the large amount of truck traffic serving industrial, warehousing, and freight forwarding uses in the area make San Bruno susceptible to traffic noise.

Railway Noise

Trains operating on the Southern Pacific Railroad Line through San Bruno affect the noise environment of nearby residential areas. These tracks run adjacent to Huntington Avenue. Currently, 98 Caltrain trains and two freight trains pass through San Bruno each week-day. The freight trains operate six times a week between 7 to 10 p.m. from Sunday to Friday. The trains originate from South San Francisco and travel to San Jose and back each evening. Currently, there is also limited Caltrain activity on the weekends.

In June 2003, BART completed the SFO Airport Extension Project that included extension of the Bay Area Rapid Transit (BART) tracks by 8.7 miles and four new stations, including a new station in San Bruno and a station inside the new International Terminal at SFO. The new BART station in San Bruno, the associated parking structure, and the BART/City of San Bruno Joint Police

Station is located on Huntington Avenue adjacent to the existing shops at Tanforan. The BART tracks run along Huntington Avenue through San Bruno.

Industrial Noise

Industrial land uses in San Bruno are limited primarily to light industrial operations (manufacturing, distribution, storage) and semi-industrial uses (car repair). These types of uses are concentrated in the North Belle Air neighborhood in the northeastern part of the city. This area is largely located within the 65 dB CNEL contour for aircraft noise.

Figure 7-5 illustrates noise contours from the various noise sources in the city.

Noise Exposure Standards

State Regulations

Title 24 of the California Code of Regulations, the Building Standards Administrative Code, contains the State Noise Insulation Standards, which specify interior noise standards for new hotels, motels, apartment houses, and dwellings other than single-family homes. Such new structures must be designed to reduce outdoor noise to an interior level of (no more than) 45 dB in any habitable room. They require an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than 60 dB. Title 24 standards are typically enforced by local jurisdictions through the building permit application process.

San Mateo County Comprehensive Airport Land Use Plan Standards

The San Mateo County Airport Land Use Commission (ALUC) develops and implements the *San Mateo*

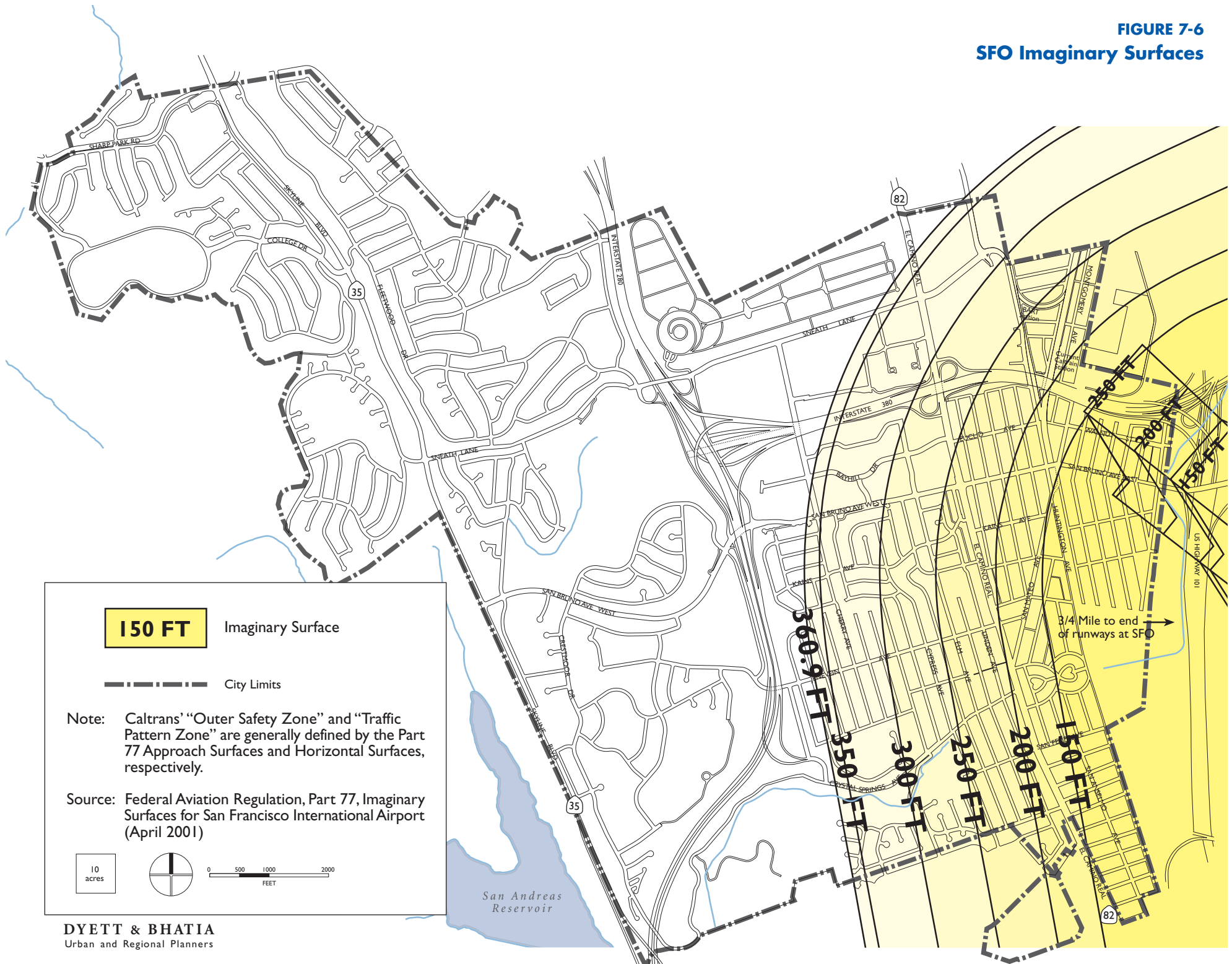
County Comprehensive Airport Land Use Plan (San Mateo County CLUP). The current San Mateo CLUP was adopted in December 1996. The CLUP establishes the procedures that C/CAG uses in reviewing proposed local agency actions that affect land use decisions in the vicinity of San Mateo County's airports. Airport planning boundaries define where height, noise and safety standards, policies, and criteria are applied to certain proposed land use policy actions. San Bruno is located within the jurisdiction of the SFO Land Use Plan, a subchapter of the San Mateo County CLUP. For the purposes of review under the SFO Land Use Plan, the '01 NEM, the most recent federally accepted NEM is the noise contour map that C/CAG uses in making its determination of the consistency of a proposed local agency land use policy action with the SFO Land Use Plan. The northeastern corner of San Bruno is within the 2001 65 and 70 CNEL noise contours; the noise/land use compatibility standards shown in Table 7-1 apply to the areas within these noise contours.

City of San Bruno Noise Standards

General Plan noise standards are shown in Table 7-2. These apply to areas outside of the airport noise impacted areas; for land within 60 db or greater airport noise contours (Figure 7-5), County airport land use compatibility noise standards as per Table 7-1 shall apply. For sites impacted by both airport and non-airport related sources, the more stringent of the two restrictions shall apply.

San Bruno's Noise Ordinance is contained in Title 6 of the San Bruno Municipal Code. The ordinance places limits on noise levels in residential zones, limits construction activity noise levels and hours near residential zones, establishes machinery noise level limits, and addresses amplified sounds.

FIGURE 7-6
SFO Imaginary Surfaces



7-6 AIRPORT SAFETY

Approximately 90 percent of arrivals at SFO occur on the east-west runways, with approaches over San Francisco Bay and portions of San Bruno. Approximately 70 percent of departures occur on the north-south runways.

The Federal Aviation Administration (FAA) is the federal agency charged with regulating air commerce and achieving efficient use of navigable airspace. The FAA has established FAR Part 77 criteria which are imaginary surfaces that extend outward from the end of each runway and define the maximum heights of structures within the airport vicinity. Permissible building

heights are equal to the difference between the height of the horizontal plane (or imaginary surface of flight pattern) and the ground elevation above mean sea level. Figure 7-6 illustrates the FAR Part 77 criteria applicable to San Bruno.

TABLE 7-1: San Mateo County Comprehensive Airport Land Use Plan Noise/Land Use Compatibility Standards

LAND USE	GENERAL LAND USE CRITERIA, CNELA		
	COMPATIBLE <i>No special noise insulation requirements for new construction</i>	CONDITIONALLY COMPATIBLE <i>New development should be undertaken only after analysis and including needed noise insulation features in design</i>	INCOMPATIBLE <i>New construction should not be undertaken unless related to airport activities or services. Special noise insulation features should be included in construction</i>
RESIDENTIAL: single- and multi-family, mobile homes, schools, libraries, churches, hospitals, nursing homes, and auditoriums	Less than 65	65 to 70	More than 70
COMMERCIAL: retail, restaurants, office buildings, hotels, motels, movie theaters, sports arenas, playgrounds, cemeteries, and golf courses	Less than 70	70 to 80	More than 80
INDUSTRIAL: manufacturing, transportation, communications, and utilities	Less than 75	75 to 85	More than 85
OPEN SPACE: agriculture, mining, fishing	Less than 75	NA	More than 75

Source: San Mateo County Airport Land Use Commission, San Mateo County Comprehensive Airport Land Use Plan, December 1996.

TABLE 7-2: Land Use Compatibility For Community Noise Environments

LAND USE CATEGORY	EXTERIOR DAY/NIGHT NOISE LEVELS DNL or Ldn, dB					
	55	60	65	70	75	80
Residential—Single Family	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential—Multiple Family	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Transient Lodging—Motels, Hotels	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Schools, Libraries, Churches, Hospitals, Nursing Homes	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Auditoriums, Concert Halls, Amphitheaters	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Sports Arena, Outdoor Spectator Sports	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Playgrounds, Parks	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Office Buildings, Business, Commercial and Professional	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Industrial, Manufacturing, Utilities, Agriculture	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable

INTERPRETATION

Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.
Normally Unacceptable	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Clearly Unacceptable	New construction or development should not be undertaken.

7-7 HEALTH AND SAFETY POLICIES

Guiding Policies

- HS-A** Reduce the risk of loss of life, injuries, loss of property, or resources due to natural hazards. Recognize the interrelationship between potential land use plans and land capacity constraints.
- HS-B** Reduce the potential for damage from geologic hazards through appropriate site design and erosion control.
- HS-C** Reduce the potential for damage from seismic hazards through geotechnical analysis, hazard abatement, emergency preparedness, and recovery planning.
- HS-D** Protect sites subject to flooding hazards by implementing storm drainage improvements, and by requiring building design and engineering that meets or exceeds known flood risk requirements.
- HS-E** Ensure the health, safety, and welfare of San Bruno residents by requiring appropriate use, disposal, and transport of hazardous materials.
- HS-F** Protect the health and comfort of residents by reducing the impact of noise from automotive vehicles, San Francisco International Airport, railroad lines, and stationary sources.
- HS-G** Ensure that all development heeds safety precautions from the San Francisco International Airport.

Implementing Policies

Natural Hazards

- HS-1** Regulate development, including remodeling or structural rehabilitation, to assure adequate mitigation of safety hazards on sites having a history or threat of slope instability, erosion, subsidence, seismic dangers (including those resulting from liquefactions, ground failure, ground rupture), flooding, and/or fire hazards.
- HS-2** Review and revise the City's Building Code, Zoning Ordinance, and Subdivision requirements to safeguard against seismic, geologic, and safety hazards. Mitigation should include:
- Minimal grading and removal of natural vegetation to prevent erosion and slope instability. Cleared slopes should be replanted with vegetation.
 - Proper drainage control to prevent erosion of the site and affected properties.
 - Careful siting and structural engineering in unstable areas.
 - Consideration of flooding and fire hazards in siting and designing new development.

Geologic and Seismic Hazards

- HS-3** Require geotechnical investigation of all sites, except single-family dwellings, proposed for development in areas where geologic conditions or soil types are subject to landslide risk,

slippage, erosion, liquefaction, or expansive soils. (Require submission of geotechnical investigation and demonstration that the project conforms to all recommended mitigation measures prior to City approval.

HS-4 Prevent soil erosion by retaining and replanting vegetation, and by siting development to minimize grading and land form alteration.

HS-5 Require preparation of a drainage and erosion control plan for land alteration and vegetation removal on sites greater than 10,000 sq. ft. in size.

HS-6 Restrict development of critical facilities—such as hospitals, fire stations, emergency management headquarters, and utility lifelines—in areas determined as high-risk geologic hazard zones (Figure 7-2).

HS-7 Development in areas subject to seismic hazards, including ground shaking, liquefaction, and seismically-induced landslides (Figure 7-2) will comply with guidelines set forth in the most recent version of the California Division of Mines and Geology Special Publication 117.

HS-8 Identify existing structural hazards related to un-reinforced masonry, poor or outdated construction techniques, and lack of seismic retrofit. Coordinate with the Redevelopment Agency to provide assistance to property owners to abate or remove structural hazards that create an unacceptable level of risk.

HS-9 In accordance with the Alquist-Priolo Special Studies Zones Act, do not permit structures across an active fault (Figure 7-2) or within 50 feet of an active fault, except single-family wood frame dwellings where no other location on a lot is feasible. Require any new development to contract with geotechnical engineers to reduce potential damage from seismic activity.

HS-10 Recommend a geologic report by a qualified geologist for construction or remodeling of all structures, including single-family dwellings, proposed within 100 feet of a historically active or known active fault (Figure 7-2). Geologic reports should recommend minimum setbacks, siting and structural safety standards, to reduce potential seismic hazards. Geologic reports must be filed with the State Geologist by the City within 30 days of receipt.

HS-11 Coordinate with surrounding cities, agencies, and San Mateo County in planning for recovery after a major seismic event. Determine appropriate emergency management and rebuilding strategies.

HS-12 Develop and provide incentives for property owners to conduct preventative maintenance of structures and to perform foundation and other seismic retrofit improvements.

Flooding

Please note that policies within Chapter 6: Environmental Resources and Conservation and Chapter 8: Public Facilities and Services address water supply and conservation. Additionally, policies in the Geology and Hazardous Materials sections of this element address water quality.

- HS-13** With cooperation from the San Mateo County Flood Control District, continue maintenance, early warning, and clean up activities for storm drains throughout San Bruno. Upgrade or replace storm drains where needed to reduce potential flooding, particularly in the neighborhoods east of El Camino Real.
- HS-14** Coordinate with the Federal Emergency Management Agency (FEMA) to ensure appropriate designation and mapping of floodplains.
- HS-15** Actively engage the San Mateo County Flood Control District to address long-term solutions to potential flood hazards; solutions advocated will include but are not limited to: greater pumping capacity, deeper flow channels, or detention ponds.
- HS-16** Design and engineer new or redevelopment projects in potential flood hazard areas (e.g., Belle Air Park) to withstand known flood risk.
- HS-17** Require upgrade of the City's storm drain infrastructure proportionate with new development's fair share of demand. Require that stormwater management capacity and infrastructure are in place prior to occupancy of new development.

HS-18 Require developers to implement erosion and sedimentation control measures to maintain an operational drainage system, preserve drainage capacity, and protect water quality.

HS-19 Maintain ongoing communication and coordination with surrounding cities, San Mateo County, and agencies—primarily the San Mateo County Flood Control District, but also San Francisco International Airport and California Department of Fish and Game—to ensure proper maintenance of storm drain channels and pipes that carry surface water runoff away from San Bruno to the San Francisco Bay.

HS-20 Retain existing open space areas that serve as detention ponds in order to retain stormwater, recharge aquifers, and prevent flooding.

HS-21 Revise San Bruno landscaping and development standards to prevent unnecessary pooling of water, as such pooling may increase residents' susceptibility to mosquito infestation and viruses.

HS-22 Require that construction-related grading and other activities comply with the Association of Bay Area Governments' (ABAG) Manual of Standards for Erosion and Sediment Control Measures and with the California Stormwater Quality Association (CASQA), Stormwater Best Management Practice Handbook for Construction.

Hazardous Materials

- HS-23** Ensure appropriate clean-up of all former commercial and industrial sites according to relevant regulatory standards prior to reuse.
- HS-24** Control the transport of hazardous substances to minimize potential hazards to the local population. Identify appropriate regional and local routes for transportation of hazardous materials, and require that fire and emergency personnel can easily access these routes for response to spill incidents.
- HS-25** Review and revise City regulations regarding manufacturing, storage, and usage of hazardous materials as necessary to minimize potential hazards.
- HS-26** Restrict siting of businesses that use, store, process, or dispose of large quantities of hazardous materials in areas subject to seismic fault rupture or strong ground shaking (Figure 7-2).
- HS-27** Initiate a public awareness campaign—through flyers, website, and mailings—about household hazardous waste management, control, and recycling through San Mateo County programs and San Bruno Garbage.
- HS-28** Require that lead-based paint and asbestos surveys be conducted by qualified personnel prior to structural demolition or renovation, in buildings constructed prior to 1980.
- HS-29** Require abatement of lead-based paint and asbestos prior to structural renovation and demo-

lition, and compliance with all State, federal, OSHA, Bay Area Air Quality Management District, and San Mateo County Health, Environmental Health Division rules and regulations.

- HS-30** Regulate development on sites with known or suspected contamination of soil and/or groundwater to ensure that construction workers, the public, future occupants, and the environment are adequately protected from hazards associated with contamination, in accordance with federal, State, and local rules, regulations, policies, and guidelines.

- HS-31** Require that developers compact infill soil following the removal of underground storage tanks.

Noise

- HS-32** Encourage developers to mitigate ambient noise levels adjacent to major noise sources by incorporating acoustical site planning into their projects. Utilize the City's Building Code to implement mitigation measures, such as:
- Incorporating buffers and/or landscaped berms along high-noise roadways or railways;
 - Incorporating traffic calming measures and alternative intersection design within and/or adjacent to the project;
 - Using reduced-noise pavement (rubberized asphalt); and
 - Incorporating state-of-the-art structural sound attenuation measures.

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| <p>HS-33 Prevent the placement of new noise sensitive uses unless adequate mitigation is provided. Establish insulation requirements as mitigation measures for all development, per the standards in Table 7-1.</p> <p>HS-34 Discourage noise sensitive uses such as hospitals, schools, and rest homes from locating in areas with high noise levels. Conversely, discourage new uses likely to produce high levels of noise from locating in areas where noise sensitive uses would be impacted.</p> <p>HS-35 Require developers to comply with relevant noise insulation standards contained in Title 24 of the California Code of Regulations (Part 2, Appendix Chapter 12A).</p> <p>HS-36 Encourage developers of new residential projects to provide noise buffers other than sound walls, such as vegetation, storage areas, or parking, as well as site planning and locating bedrooms away from noise sources.</p> <p>HS-37 Require that all sponsors of new housing (residential and senior housing units) record a notice of Fair Disclosure, regarding the proximity of the proposed development to San Francisco International Airport and of the potential impacts of aircraft operation, including noise impacts, per Ordinance 1646 and AB 2776.</p> <p>HS-38 Require developers to mitigate noise exposure to sensitive receptors from construction activities. Mitigation may include a combination of techniques that reduce noise generated at the</p> | <p>source, increase the noise insulation at the receptor, or increase the noise attenuation rate as noise travels from the source to the receptor.</p> <p>HS-39 Pursue mitigation of noise impacts from San Francisco International Airport to the fullest extent possible via the SFO/Community Roundtable and other venues. Support and advocate for operational practices such as flight curfews, changes to aircraft, new technologies and physical improvements such as tree screens that would reduce the area in San Bruno impacted by aircraft noise.</p> <p>HS-40 Prohibit new residential development within the 70+ Airport CNEL areas, as dictated by Airport Land Use Commission infill criteria.</p> <p>HS-41 Via the SFO/Community Roundtable and other avenues, encourage SFO authorities to undertake noise abatement and mitigation programs that are based not only on the airport's noise contour maps, but that consider other factors such as the frequency of over-flights, altitude of aircraft, and hours of operation.</p> <p>HS-42 Require new residential development within the 65 dBA CNEL SFO noise contour to submit an aviation easement to the airport. Specific aviation easement requirements shall be consistent with the County of San Mateo Comprehensive Airport-Land Use Compatibility Plan for SFO.</p> <p>HS-43 Allow reasonable latitude for noise generated by uses that are essential to community health,</p> |
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safety, and welfare, such as emergency vehicle operations and sirens.

HS-44 Adopt traffic mitigations—including reduced speed limits, improved paving texture, and traffic signal controls—to reduce noise in areas where residential development may front on high-traffic arterials, such as El Camino Real.

HS-45 Where feasible and appropriate, develop and implement noise reduction measures when undertaking improvements, extensions, or design changes to San Bruno streets.

HS-46 Encourage transit agencies to develop and apply noise reduction technologies for their vehicles to reduce the noise and vibration impacts of Caltrain, BART and bus traffic.

HS-47 Enforce Vehicle Code noise emission standards, as well as provisions which prohibit alteration of vehicular exhaust systems in ways that increases noise levels.

HS-48 When environmental reviews of SFO activity are conducted the City should participate in environmental analyses conducted of SFO in order to better understand and address environmental issues affecting San Bruno, including but not limited to: frequency of over flight during nighttime hours, soil and groundwater contamination in and surrounding airport property from gasoline and jet fuel or similar sources, air pollution resulting from overflight jet exhaust and idling aircrafts, airport related traffic impacts on local roads, light and glare impacts from air-

port generated lighting and overall noise generation, and impact of airport alterations and/or expansion.

HS-49 The City should work with the County of San Mateo and local planning directors in future Comprehensive Airport-Land Use Compatibility Plan planning efforts to raise shared concerns regarding airport impacts on the region. The SFO/Community Roundtable should help facilitate this process as well.

Air Safety

HS-50 Work together with other affected cities, the Airport Land Use Commission, and San Mateo County to achieve further reduction of SFO airport-generated noise and safety concerns.

HS-51 Require all new development to comply with FAR Part 77 height restriction standards, in accordance with Airport Land Use Commission guidelines.

HS-52 Actively and aggressively participate in forums and discussions regarding operations and expansion plans for San Francisco International Airport. Seek local representation on task forces, commissions, and advisory boards established to guide airport policies and programs.

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